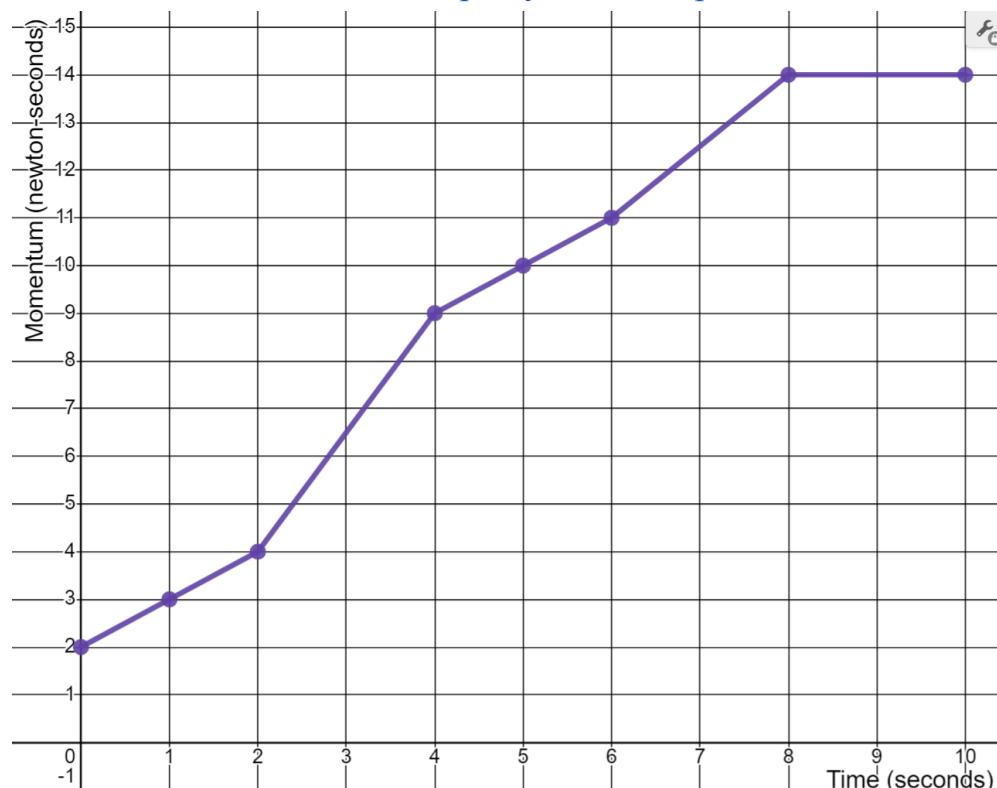


Ottocento Lesson #8 Average Rate of Change & Slope Proportions Worksheet

Video Solutions at: <https://youtu.be/FlpZN4KlcVw>



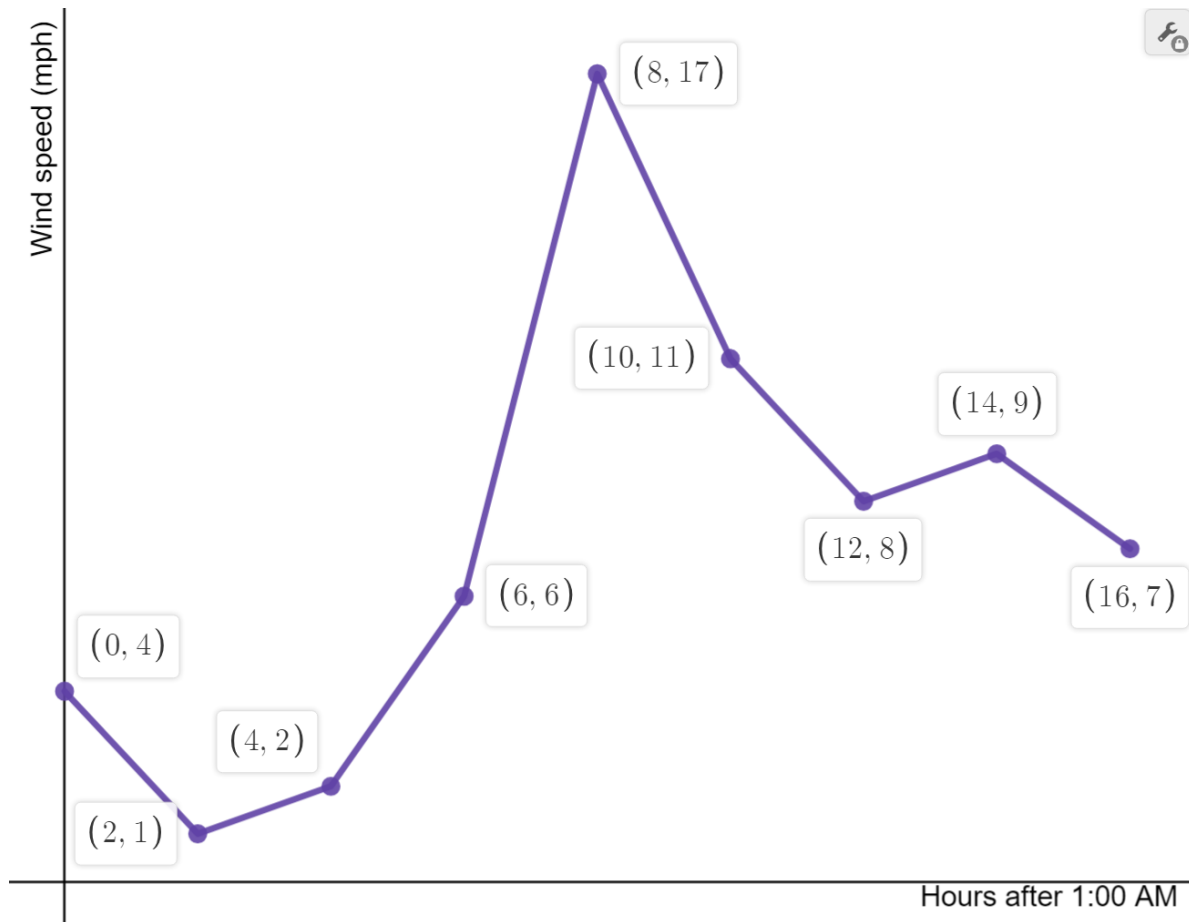
The graph shows the momentum y , in newton-seconds, of an object x seconds after the object started moving, for $0 \leq x \leq 10$. Use the graph to answer Q1 and Q2.

Question 1

What is the average rate of change, in newton-seconds per second, in the momentum of the object from $x = 0$ to $x = 4$?

Question 2

What is the average rate of change, in newton-seconds per second, in the momentum of the object from $x = 5$ to $x = 8$?



The line graph above shows the wind speed recorded by an anemometer in a rural village, where x is the number of hours after 1:00 AM and y is the wind speed, in miles per hour (mph). Use the graph to answer Q3 and Q4.

Question 3

What is the average rate of change, in miles per hour per hour, in the wind speed from 11:00 AM to 5:00 PM?

Question 4

What is the greatest average rate of change in wind speed, in miles per hour per hour, between two readings shown in the graph?



$$K(x) = \frac{5}{9}(x - 32) + 273.15$$

The function K gives the temperature in kelvins that corresponds to a temperature of x degrees Fahrenheit.

Question 5

If a temperature increases by 31.5 degrees Fahrenheit, what is the corresponding temperature change in kelvins?

Question 6

If a temperature decreases by 41 kelvins, what is the corresponding temperature change in degrees Fahrenheit?



$$R(x) = \frac{9}{5}x + 491.67$$

The function R gives the temperature in degrees Rankine that corresponds to a temperature of x degrees Celsius.

Question 7

If a temperature increases by 58 degrees Rankine, what is the corresponding temperature change in degrees Celsius?

Question 8

If a temperature decreases by 4.7 degrees Celsius, what is the corresponding temperature change in degrees Rankine?



$$T(p) = 0.28p + 13$$

The function T gives the melting temperature of a DNA fragment in degrees Celsius that corresponds to a % Genomic Content of p .

Question 9

If the % Genomic Content increases by 6, what is the corresponding melting temperature change in degrees Celsius?

Question 10

If the melting temperature decreases by 8.2 degrees Celsius, what is the corresponding change in % Genomic Content?